

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
Review of the Emergency Alert System)	EB Docket No. 04-296
)	
First Report & Order and)	FCC 05-191
Further Notice of Proposed Rulemaking)	

**COMMENTS OF
WGBH NATIONAL CENTER FOR ACCESSIBLE MEDIA
and
REHABILITATION ENGINEERING RESEARCH CENTER ON
TELECOMMUNICATIONS ACCESS**

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The WGBH National Center for Accessible Media (NCAM)¹ and the Rehabilitation Engineering Research Center on Telecommunications Access (RERC-TA)² submits these comments in response to the Commission's Further Notice of Proposed Rule Making in the above-captioned proceeding concerning the Commission's review of its rules and policies concerning the Emergency Alert System (EAS).

BACKGROUND

NCAM is the research and development arm of the Media Access Group at the WGBH Educational Foundation. Since 1971, WGBH has been a pioneer in making media accessible to people with disabilities through The Caption Center and the Descriptive Video Service[®]. NCAM was founded in 1993 to build on WGBH's knowledge base in the field of access technologies, and conducts a variety of projects supported by government and corporate funding.

NCAM's Access to Emergency Alerts project³, funded by the US Department of Commerce's Technology Opportunities Program (TOP), is directly involved in many of the issues raised by the Further Notice of Proposed Rulemaking. This project unites emergency alert providers, local information resources, telecommunications industry and public broadcasting representatives, and consumers in a collaborative effort to research and disseminate replicable

¹ <http://ncam.wgbh.org>

² <http://trace.wisc.edu/telrerc/>

³ <http://ncam.wgbh.org/alerts>

approaches to make emergency warnings more accessible for people with sensory disabilities. The Access Alerts project is identifying the gaps that exist between alert systems that deliver information, and the unrealized potential of these systems to serve the entire population. Through working group activities, practical field tests, end-user testing and the creation of a public resource on-line repository, this project will create guidelines and best practices for general dissemination to support the development of accessible systems, services and products.

Two other current NCAM projects are involved in related and complementary research and development efforts. Access to Locally-Televised On-Screen Information⁴, and Access to Home Media Centers⁵, both funded by the U.S. Department of Education's National Institute for Disability and Rehabilitation Research (NIDRR), are working with a variety of industry and technology standards organizations, public and commercial broadcasters and vendors, and consumer organizations to identify accessibility solutions for related production, distribution and home electronics systems and devices. Much of this work has direct relevance and potential impact on accessibility of emergency alert messages.

Past NCAM projects have included development of technical standards, test materials, guidelines and best practices for access to digital television, the web and rich media, theatrical film, DVD, and distance learning systems. NCAM

⁴ <http://ncam.wgbh.org/onscreen>

⁵ <http://ncam.wgbh.org/homemedia>

staff provides consulting services to non-profit, corporate and government clients and are acknowledged as leaders in the field of media accessibility.

The RERC-TA is a joint project of Gallaudet University and the Trace Center of the University of Wisconsin, Madison. The primary mission of the RERC-TA is to find ways to make standard telecommunications systems directly usable by people with all types and degrees of disability, and to work with industry and government to put access strategies into place. The investigators of the center have served on several federal advisory committees on accessibility of equipment and services, and recently served on the FCC's Network Reliability and Interoperability Council. The RERC-TA has commented on numerous FCC proceedings regarding the accessibility of "mainstream" technology, including prior proceedings on improving the nation's emergency alert system, and has presented at emergency access summits hosted by the FCC. Some of the RERC staff were involved in the specification and testing of the accessibility procedures for people who are deaf as these are contained in the present emergency alert system. Most recently, on November 2-3, 2005, the RERC-TA hosted an Accessible Emergency Notification and Communication: State of the Science Conference, showcasing various technologies designed to alert people with disabilities about emergencies.

NCAM and RERC-TA RESPONSES TO SPECIFIC FNPRM QUESTIONS

NCAM and the RERC-TA submits these responses to specific questions raised by the Commission in the current Further Notice of Proposed Rulemaking.

Access Issues and Existing EAS Rules

- *Are individuals with hearing and vision disabilities subject to inconsistent aural and visual information in EAS alerts?*

Individuals with hearing and vision disabilities are subject to inconsistent aural and visual information in EAS alerts. This is well documented in this proceeding, in comments filed with the Commission by Telecommunications for the Deaf (TDI), et. al., the American Foundation for the Blind (AFB), the Rehabilitation Engineering Research Center on Telecommunications Access (RERC-TA) and others.

NCAM and the RERC-TA agrees with these commenters that an “accessibility drift”⁶ exists, where people with disabilities actually have less access to EAS messages than they used to, due to

- 1) the voluntary nature of EAS at the state and local level (where the vast majority of messages occur),
 - 2) video alert messages including only truncated versions of audio alert messages,
 - 3) the increased use of crawls and on-screen graphics with no related audio information,
 - 4) lack of compliance with related captioning mandates,
 - 5) lack of description, and
 - 6) an undefined “alert tone” with no further information or reference.
- *Are there disparities between the EAS rules and the FCC rules concerning accessibility of emergency information (47 CFR 79.2) that need to be resolved?*

As RERC-TA correctly asserts⁷, there are in fact three sets of rules (including 47 CFR 73.1250(h)) concerning accessibility of emergency information.

⁶ RERC-TA comments, October 29, 2004, p. 10

⁷ RERC-TA comments, October 29, 2004, p. 11

Coupled with a variety of mandatory and voluntary compliance schemes at the national and local level, the practical result is a complicated and often confusing and contradictory set of emergency notification requirements, commonly misunderstood at the local community level. NCAM and the RERC-TA encourages the Commission to clarify and simplify these requirements.

NCAM and the RERC-TA agree with the many commenters who have noted that “collisions” of visual EAS messages and closed captioning are quite common, particularly during voluntary local and state emergency notifications.

While the EAS rules clearly state that a national message crawl “shall” be displayed “at the top of the television screen or where it will not interfere with other visual messages”⁸, the language of 47 CFR 79.2 (accessibility of emergency information) is less clear (“should”) on what is required, or how to accomplish it.

Despite the intent of language in 47 CFR 79.2 that “video programming distributors must ensure that emergency information should not block any closed captioning and any closed captioning should not block any emergency information”, the daily reality remains that captions and visual crawl messages are commonly displayed on the same part of the screen.

Similarly, the rules are confusing when they attempt to address accessibility for people who are blind or who have low vision.

The national EAS rules state, “all radio and television stations shall transmit EAS messages in the main audio channel” (which may or may not provide equivalent or fully accessible information). The video emergency information accessibility sections of 47 CFR 79.2 have no single, clear requirement, but provide a cumbersome and vague “if/then” scheme that has not and will not provide reliable delivery of accessible information. AFB in its comments in this proceeding⁹ clearly describes the lack of described visual information and the short-comings of the alert tone technique outlined in 47 CFR 79.2.

⁸ 47 CFR 11.51(d)

⁹ AFB comments, p.3

There may be two reasons these situations exist. First, until very recently, there has been a common perception that the Commission is reluctant to enforce these rules through fines and forfeitures. Second, there is general confusion concerning implementation of the rules. Both need to be addressed.

NCAM and the RERC-TA encourages the Commission to harmonize these various rules and requirements in clear and unambiguous language (e.g., consistent use of “shall” rather than “should”).

We respectfully suggest that a single, comprehensive, coherent and mandatory system of national, state and local emergency alert requirements will help provide effective and reliable delivery of accessible information.

Connecting Visual and Aural EAS Message Elements

- *Do EAS television crawls lack specificity due to the “disconnect” between the generic information contained in the digital header codes and the information contained in the audio portion of the EAS message?*
- *Should the Commission revise the EAS rules to require all video programming distributors subject to the Commission’s Part 11 (EAS) rules to provide the same information in both the visual and aural versions of all EAS messages (instead of only the header code information that EAS participants now provide visually) or the critical details of the emergency information as required by section 79.2.*

This “disconnect” is at the root of the problem, and must be addressed and resolved.

The EAS header code information required in a visual message consists of four elements: the Originator, Event, Location, and the valid time period of the EAS message. As this question states, these are generic in nature. The current system, even with expanded use of header codes, may not provide potentially critical information that may be found in the audio portion of EAS messages, such as detailed descriptions of the extent of the event or the area affected, evacuation routes, road closures or shelter information.

Effective use of the EAS, particularly for people with sensory disabilities, depends on complete, accurate, timely and consistent delivery of information across all modalities. Both the visual and aural versions of all EAS messages should contain the same, detailed information. We feel that 47 CFR 79.2 provides good starting-point guidance, and we support suggestions made by other commenters that this list should be expanded.

Making EAS Message Elements Accessible

- *Should parties subject to the Commission's EAS rules be required to make an audio EAS message accessible to those with hearing disabilities by using a transcription of the audio message through the use of closed captioning or other methods of visual presentation, such as open captioning, crawls, or scrolls, that appear on the screen?*
- *We seek comment on SBE's assertions that in order to provide a visual message identical to the audio feed, providers would have to transcribe the feed accurately and in real time into a character generator, something for which very few television stations and cable companies have the resources.*

While the Society of Broadcast Engineers' comments in this proceeding have called needed attention to the current difficulties faced by message providers, television stations and cable companies in ensuring the audio content of EAS messages are equally accessible to those with hearing disabilities, we also note that SBE points to potential solutions as well, and discusses this issue in detail.¹⁰

Wisely, SBE suggests the most effective approach is to find methods to include text within the EAS message protocol itself, rather than require repeated and costly local transcription of the audio portion into text.

We agree completely. Delivering equivalent text within the EAS message would be very helpful, and if delivered in standard formats might be able to drive conventional character generators, graphic systems or caption encoders. We also agree with SBE that this approach opens the possibility for simultaneous delivery of text to other devices such as cell phones, personal wireless devices, highway

¹⁰ SBE comments, p. 17

signs and text display devices, and text displays on current analog and emerging digital television and radio devices.

SBE calls the Common Alerting Protocol (CAP) “perhaps the most promising avenue for text transmission” and says that “implementation of the CAP standard at the origination points of EAS emergency messages would be a quantum improvement”.¹¹ Again, we agree.

In fact, as part of its Access to Emergency Alerts project, NCAM is exploring use of the CAP standard to enable the delivery of multiple video, text and audio versions of emergency messages in a single CAP “package”.

Two approaches are possible within the CAP standard. The first is to include alternate versions of the message within the CAP payload itself. The second is to include in the CAP message codes or triggers (similar to web URLs) to point to external resources that provide the alternate versions of the message for alternate delivery modes.

NCAM is currently designing field tests to determine the baseline requirements, technical constraints and specifications to enable these uses of CAP. Lab bench testing is due to begin in January 2006, and trial transport demonstrations will be conducted in the first quarter of 2006. These activities will inform the follow-on work of the project and its partners, and NCAM will be happy to share its results with the Commission, its staff and any interested parties.

- *Should parties subject to the Commission’s EAS rules be required to provide an audio feed that duplicates any text portion of an EAS alert?*

Yes. Just as it is critical to provide visual accessibility of audio-based messages for people who are Deaf or hard of hearing, it is critical to provide audio accessibility of text-based messages for people who are blind or who have low vision.

¹¹ SBE comments, p. 18

An interesting possibility presented by use of the CAP standard is delivery of additional audio feeds. As part of its CAP experiments, NCAM plans to use off-the-shelf text-to-speech software to render multiple audio streams from text portions of our trial EAS messages. We plan to construct a number of trial local, state and national scenarios to determine the technical and workflow requirements involved in creating a CAP message in this fashion. We will also investigate how such a CAP message might be decoded and processed for delivery through a variety of distribution chains, and to consumer electronics devices as well.

- *To the extent that an EAS message contains other visual elements, should parties subject to the Commission's EAS rules be required to describe such visual portions?*

Yes. FCC rules currently require such description in certain circumstances. Yet how this description is provided can vary widely.

In the case of newscasts (either regularly scheduled, or interrupt), stations, news directors, reporters and announcers can simply be aware of the need to provide visual description and detail in their reports, being sure to avoid sole reliance on the types of "on your screen" information and references discussed by AFB in its comments in this proceeding (i.e., references by on-screen personnel to textual or graphic information printed on the TV screen without actually voicing such information). People who are blind or have low vision need to be provided with meaningful information.

Creation of more detailed descriptions of visual portions of an EAS message may require more complex, labor-intensive and costly tasks, and may also need to be accommodated outside of the main audio/video distribution channel.

Uses of the SAP channel on NTSC video, and subcarriers on FM radio are well-known and generally understood within the industry, particularly to provide video description and radio reading services. These have clear counterparts in digital television and radio systems as multiple audio services, and could be used

for emergency message delivery as well. Reliance on such alternate audio delivery sources for emergency information must be accompanied by a comprehensive and extensive effort to inform the public of the availability of such resources and how to make use of them.

Some stations have used these channels to carry text-to-speech synthesized audio derived from school closing information that otherwise appears only as graphic crawls. This is an approach that merits consideration, particularly as methods evolve to include text within EAS messages themselves. NCAM's Access to Locally-Televised On-Screen Information project will research and develop systems and procedures that enable real-time processing and conversion of on-screen text crawls into speech output. It will also develop systems and procedures that address display conflicts between captions and on-screen graphics by developing methods of tagging and prioritizing text and graphics messages within automated display systems.

In the case of a visual crawl superimposed over program video and accompanied by an aural tone, we remain concerned that this results in notification without substance. We agree with AFB that "an aural tone alerting a person who is blind to use the radio for accessible information may yield no information at all"¹².

- *Will these obligations impose different technical or financial burdens on the various media that must comply with the Commission's EAS rules?*

Clarification, simplification and harmonization of the related FCC rules can only help to contain the technical and financial burdens involved in providing critical access to emergency information for people with sensory disabilities. With clarification of FCC requirements, further technological development will be triggered among systems and solutions providers, thus opening up to the marketplace development of competitive and efficient means of assuring people with disabilities are fully notified in emergency situations.

¹² AFB comments, p.3

Next Generation Emergency Alert System

- *How can the Commission incorporate existing disability access rules into the development of a more comprehensive EAS?*
- *To what extent can revisions in the Commission's closed captioning rules be made to enhance the dissemination of emergency information?*

As we have suggested, a single, comprehensive, coherent and mandatory system of national, state and local emergency alert requirements should be the goal of any such effort.

However, the first steps in this process must include consistent and rigorous enforcement of the existing rules, and meaningful support and follow-through on consumer complaint procedures. Recent Commission actions, including the issuing of forfeitures in San Diego, Fort Myers, Florida and Washington DC, have sent a clear message of the importance of emergency information accessibility rules, and have raised the profile of this issue significantly among services providers and consumers alike. We support a continued pro-active stance by the Commission on these matters, and support the caption quality petition filed by TDI, et al., in the related proceeding now pending¹³.

- *How can any next-generation, digitally-based alert and warning system be developed in a manner that assures that persons with disabilities will be given equal access to alert and warning as other Americans?*
- *Are there any additional steps that the Commission can take to ensure that people with disabilities are considered during the design process of such a system? For example, should the Commission adopt requirements that may be factored into the design process and, if so, what type of requirements?*

First, the Commission needs to ensure that there is direct and meaningful involvement of representatives of the affected disability communities in any effort to design such a system. Second, a clear set of user requirements needs to be established as a baseline for both technical specifications and feature sets.

¹³ FCC 05-142, adopted July 14, 2005

Third, the foundation of such a system needs to be a non-proprietary, deeply considered, widely accepted, open standard such as the Common Alerting Protocol (CAP). Fourth, funding needs to be provided to develop reference implementation models and test materials for both technical specifications and feature sets, as it is highly unlikely that interoperability can be achieved in their absence.

- *Can a digitally-based alert and warning system take advantage of the Commission's rules setting forth operational and technical standards for telecommunications relay services (TRS), a nationwide system which permits persons with hearing and speech disabilities to have access to the telephone system?*

Integration of the Commission's rules and requirements for both TRS and VRS (video relay services) in the design of a next-generation emergency alert system is highly desirable. Not only would this further serve the goal of a single, comprehensive, coherent and mandatory system of national, state and local emergency alert requirements, but it would include potentially valuable resources and technologies these services provide, such as text-to-voice, speech-to-speech, voice and hearing carry-over, IP relay and video relay. This would also support effective uses of so-called "reverse-911" services, which have the potential for delivering a variety of message formats for targeted and diverse audiences.

- *Would the development of such a state-of-the-art alert and warning system affect the obligations imposed by the Commission's rules that implement section 255 of the Act, which requires telecommunications manufacturers and service providers to make their products and services accessible to people with disabilities?*

Any system design attempting to be state-of-the-art must absolutely recognize the rapid blending of the previously separate technologies, services and devices of video, audio, television, radio, telephone (both wireline and wireless), print/text and the internet. More and more, televisions and telephones include internet connections, web browsers, hard drives and memory cards,

video and data services are delivered to cell phones, and computers include TV tuners, streaming audio and video services and voice-over-IP capabilities. Service providers offer integrated messaging services across a variety of personal communication devices.

Section 255 established as national policy notions of universal design, i.e., the requirement for telecommunications products and services to be accessible by the widest range of individuals, regardless of their abilities or their disabilities. To the extent that the solutions achieved through this EAS proceeding utilize telecommunications products and services, manufacturers and service providers covered by Section 255 need to ensure that such products and services will be able to offer the same functions and features regarding emergency notification for people with disabilities as they do for the general public. It will be incumbent on the FCC to step up enforcement so that this mandate is fulfilled.

In this environment, it is increasingly important for all manufacturers and service providers to address accessibility needs to assure that persons with disabilities will be given equal access to alert and warning systems.

SUMMARY

Any new EAS rules issued by the Commission must include a cohesive and consistent approach to assuring that people with disabilities are served equally as well as the general population. In addition, existing rules must be clarified where necessary and more firmly enforced when ignored. Finally, the technology exists, or is on the near horizon, to accomplish these goals in a practical and cost-effective manner.

Respectfully submitted,

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